WestEd
WestEd.org

STRATEGIC RESOURCE ALLOCATION FOR THE 21ST CENTURY

HOW STATE LEADERS CAN ADDRESS THE SILENT RECESSION

Kelsey Krausen, Ruthie Caparas, Tye Ripma, & Jason Willis

2020

Suggested citation: Krausen, K., Caparas, R., Ripma, T., & Willis, J. (2020). *Strategic resource allocation for the 21st century: How state leaders can address the silent recession.* WestEd. https://www.wested.org/resources/strategic-resource-allocation/

This report was developed with funding from the William and Flora Hewlett Foundation. The content of the report does not necessarily reflect the views or policies of the foundation.

WestEd is a nonpartisan, nonprofit research, development, and service agency that works with education and other communities throughout the United States and abroad to promote excellence, achieve equity, and improve learning for children, youth, and adults. WestEd has more than a dozen offices nationwide, from Massachusetts, Vermont, Georgia, and Washington, DC, to Arizona and California, with headquarters in San Francisco.

AUTHOR'S NOTE: COVID-19 CONSIDERATIONS

In the weeks leading up to the publication of this paper, we — like much of the world — could not have imagined the rapid and far-reaching impact of COVID-19 on our daily lives, including the education of public school students. By the end of March 2020, at least 124,000 public and private schools in the United States had closed due to COVID-19, affecting at least 55.1 million students, or nearly 98 percent of all students.[1] Although the extent of the fiscal impact on schools is still unknown, early predictions about the bearing of COVID-19 on the broader economy and state education budgets are grim. Researchers and financial experts predict short, medium, and potentially long-term implications for school district budgets and availability of resources, including reduced funding and increased costs.[2] While our team has been writing about a "Silent Recession" for the past two years, an actual recession is now on our doorstep.

State education leaders have a vital role to play in helping school districts navigate and plan for the fiscal impact of COVID-19. As we reflect on the research we have conducted for this paper, it has become increasingly apparent that the insights and highlighted practices are even more relevant today in light of the public health crisis and its consequent economic recession. Some of the strategies state leaders can employ to support school districts are outlined in this paper. Further, there are certain elements of this emerging recession — its speed, broad expanse across economic sectors, and various unknowns — that will call on state and local education leaders to identify additional, innovative solutions to trailblaze into what may become a new normal for our society and schools. We offer here a few additional considerations for state education leaders.

Focus on support for those who need it most

School closures will undoubtedly have the largest impact on vulnerable populations, such as students with disabilities, students from low-income families, students experiencing homelessness, and students who are English learners — potentially exacerbating existing achievement and opportunity gaps. In addition to experiencing issues of food and housing insecurity, which are exacerbated during an economic crisis, vulnerable students are most likely to fall behind academically during school closures. Therefore, state and school district leaders will need to determine and assess the hardest-hit communities most in need of support. Such determinations should include traditional measures of equity (e.g., at-risk populations, Wi-Fi access) as well as other measures of equity (e.g., essential service workers, single-parent homes), as not all parents and caregivers are able to provide at-home instruction or instructional support.

Higher-poverty districts, which serve larger proportions of vulnerable students, tend to rely more on state funding than more affluent districts and also are more likely to experience the greatest budget impacts.[3] Most recently, the Great Recession exacerbated funding inequities due to sharp declines in state revenue for high-need districts.[4] Given current forecasts of declining state revenue, such inequities are once again a risk, and the budget impacts would hit schools at the same time that vulnerable students, in particular, will need additional support to regain lost instructional time due to school closures. Consequently, state education leaders should keep equity issues at the forefront of resource allocation discussions by identifying those most in need of stable support and easier access to learning opportunities and by driving more resources toward those student populations.

1 https://www.edweek.org/ew/section/multimedia/map-coronavirus-and-school-closures.html

2 The extent of the economic impact is dependent on, among other factors: (a) how long this crisis continues and (b) the severity of the public health impact.https://www.routefifty.com/finance/2020/03/coronavirus-state-budget-washington-covid/163865/;https://www.ibj.com/articles/covid-19-impacts-on-state-city-budgets-remains-unclear

3 https://edunomicslab.org/wp-content/uploads/2020/03/Financial-turmoil-Final.pdf

4 Congressional Budget Office, *Estimated impact of the American Recovery and Reinvestment Act on employment and economic output in 2014* (Author, 2015); Center on Education Policy, *What impact did education stimulus funds have on states and school districts?* (George Washington University, 2012); W. Evans, R. M. Schwab, & K. L. Wagner, *The Great Recession and public education* (Russell Sage Foundation, 2014).

Recognize that communication is critical

As with any crisis, it is critical that state education leaders are intentional about their communication with the public. Ongoing communication with the public about the current budget, potential budget shortfalls, and implications for major budget obligations (including pensions, special education, and collective bargaining with teachers) is critical. For example, state education leaders should provide guidance to school districts as soon as possible on:

- The flexible use of resources
- Assurance of payment through FY2020 to allow critical functions to continue (e.g., food provisioning, distance learning)
- How the temporary, one-time resources provided through the federal aid package can help address some upcoming gaps (e.g., developing the infrastructure for providing summer school or extended learning in the fall)

State education leaders should also begin to compile resources and communicate with school district leaders about considerations for the next 3 to 18 months, including:

- Guidance for reopening schools in the fall
- Considerations for making up for learning gaps (three months of interrupted schooling, plus learning loss over the summer)
- How cover will be provided for districts that need to reopen labor negotiations
- How to plan for the possibility of future school closures if COVID-19 cases increase again in the future

Plan for flat or declining budgets in the future

A projected shortfall in state revenues[5] suggests that the FY2021 state education budgets will be either flat or declining (a "workload budget")[6] for many school districts. As noted in this paper, many school districts across the United States were already concerned about their budgets due to declining enrollment, increasing pension obligations, rising special education costs, and other rising operating costs.[7] Accordingly, state and school district leaders will likely have difficult choices to make in the coming weeks and months about how to most efficiently and effectively allocate resources over both the short term and the longer term to provide services to students, support teachers and other staff, and ensure the health and safety of their communities.

- State education leaders should be intentional about using their time to plan, strategize, and think ahead to next year's budget. The following are some considerations and possible steps to pursue in looking toward the future:
- Consider how to leverage cross-agency collaboration to increase availability of mental health supports
- Strategize for anticipated increases in requests for compensatory supports in special education
- Anticipate a likely revision to the state budget in fall 2020 and support school districts to prepare for that revision through one-time webinars to share information
- Keep track of movement on future federal aid packages
- Support school districts to plan for and execute investments in learning-recovery activities to make up for learning lost over spring/summer 2020
- Anticipate competition among public services for fewer resources in future budget cycles and work with state agencies to maximize the use of those dollars
- Have internal action teams on standby if another transition to/from distance learning becomes necessary in 2020–21

5 https://lao.ca.gov/Publications/Report/4203;https://time.com/5803430/coronavirus-states-cash-reserves/;https://www.ncsl.org/research/fiscal-policy/coronavirus-covid-19-state-budget-updates-and-revenue-projections637208306.aspx

6 Defined in Cal. Gov. Code § 13308.05 as "the budget year cost of currently authorized services, adjusted for changes in enrollment, caseload, or population, or all of these changes" and additional specified factors.

7 https://www.wested.org/resources/silent-recession

CONTENTS

INTRODUCTION

School districts and state education systems across the country are in the midst of an increasingly challenging fiscal environment. In many states, funding for K–12 education remains below pre-recession levels in what has been called a "punishing decade for school funding" (Leachman et al., 2017), despite efforts in recent years to increase funding levels for the sector. Consequently, budget forecasts for school districts are increasingly grim, and many districts are being forced to make difficult decisions about how to leverage limited dollars to best meet the needs of students.

Across the country, education costs continue to increase, from just over $131 billion in 1959–60 (adjusted for inflation) to over $700 billion in 2015–16 (Education Week, 2019a). According to a 2019 report, "America's public school system today costs taxpayers over two-and-a-half times more than it did half a century ago — far outstripping changes in enrollment over that time. When federal, state, and local spending is taken together, it stands as one of government's most-expensive endeavors" (Education Week, 2019a).

Increased costs are due to a range of factors that include economic shifts, changes in student demographics, increased expectations of the services schools should provide, and increased operational costs. Namely, major cost drivers include inflation and increased enrollment — from $25.1 million in 1949–50 to $50.6 million in fall 2016 (Education Week, 2019a). There has also been an increased need for special services, including support for students who are English learners, low-income students, and students with disabilities; new and more rigorous accountability systems and student performance standards have been introduced; and the education sector has taken increased responsibility for supporting students in ways that go beyond academic instruction. Finally, operational costs for school districts have also increased, including staff salaries and benefits, transportation, and facilities.

As education expenses continue to outpace revenues — often in ways that are outside of the general public's awareness — school districts are experiencing a "Silent Recession" (Krausen & Willis, 2018), forcing many districts to make difficult decisions about how to maximize limited dollars to best meet the needs of students. State leaders are uniquely positioned to support school districts during these difficult budget periods.

This paper outlines a series of state-level strategies for helping districts to address these rising costs and strategically deploy resources to improve student outcomes. The strategies are drawn from a research and media review, as well as interviews with 20 state leaders, directors of regional education-focused nonprofits, and leading education researchers across 10 states. The interviewees were selected to represent a sample of states that reflect the geographic, political, and demographic diversity across the country. Once states were selected, WestEd researchers invited leaders representing multiple roles and perspectives (e.g., policymakers, state education administrators, nongovernmental organizations, researchers), aiming for two interviews per selected state. Researchers also recruited state leaders and researchers specifically with content expertise or experience as technical assistance providers in the areas of teacher compensation and special education. For the media review, researchers conducted extensive online searches to identify those budget pressures that were most frequently cited in mainstream media sources in the last five years. From this list of budget pressures, researchers focused on those that were within the purview of state education leaders. The review of research was used to validate the strategies suggested by state leaders and to deepen the perspectives represented in this paper on the budgetary challenges and the strategies that could be employed to address those challenges.

To provide context, the paper first outlines the external and internal factors contributing to increased education costs,

as well as current trends in state-level funding distribution policy and practice. Next, it focuses on state-level resource allocation strategies in the following three key areas:

- special education
- educator compensation and benefits
- revenue generation

The review of research, media coverage, and interviews with district and state leaders indicated that these three areas were among the most influential factors currently affecting districts' fiscal stability.

Resource allocation to meet the needs of students

Although this is a paper about state-level budget issues, it is also fundamentally about how education systems can be organized to best support students. Accordingly, all of the resource allocation strategies included in this paper are designed to better support students. As one state leader remarked: "We sit here and we talk about programs at the state level . . . but I think the piece for me that often feels missing when we have these conversations is the kids. There are kids behind each of those numbers."

As this leader suggests, state education leaders and policymakers have an important role in making the connection clear between how resources are allocated and how the needs of students are being served. In doing so, education leaders and policymakers can demonstrate how they have put students at the center of resource allocation decisions and can articulate how those decisions connect to the state's goals for student performance.

HOW EXTERNAL FACTORS CONTRIBUTE TO RISING COSTS

Many of the fiscal conditions that school districts currently face are driven by social dynamics that extend well beyond basic cost increases from year to year. The greater economic and social context impacts the cost pressures in the education sector. For example, school budgets are frequently slashed during recessions and creep slowly back up in a strong economy (Figure 1).

Meanwhile, schools are tasked with solving some of society's most pressing problems — regardless of funding levels (Hunt, 2005). Some social problems are deep-seated, such as disparate educational outcomes driven by poverty and racial inequality, while others are more recent, such as the opioid epidemic and rising rates of autism. Compounding the pressures of these external factors, education leaders are also being held increasingly accountable for student, teacher, and system performance.

Figure 1. Change in U.S. Public Schools' Per-Pupil Expenditures After the Great Recession

Source: Common Core of Data (CCD), "National Public Education Financial Survey," 2004–05 through 2015–16. Expenditure data based on fall enrollment. Excludes "Other current expenditures," such as community services, private school programs, adult education, and other programs not allocable to expenditures per student at public schools. Constant dollars based on the Consumer Price Index, prepared by the Bureau of Labor Statistics, U.S. Department of Labor, adjusted to a school-year basis.

A long climb back to pre-recession funding levels

Cost Pressures | External Factors

Since 2009, the economy has rebounded and, accordingly, state revenue has increased. However, these increases in revenue have only recently helped school districts climb back to funding levels from 2008–09, before the Great Recession hit. Furthermore, some districts are still struggling even to catch up to pre-recession levels. As one state leader described, "All this growth was from a very low point. So, from five years ago, when you look at a year over year [increase in funding], schools look like they were doing really well. But they were restoring programs, buying back furloughs, doing things like that." The state leader noted, "Some schools were able to fully restore programs, and others weren't." As this leader's comments suggest, while the public may assume that annual increases in education funding translate to additional resources for schools, the reality is that for many school districts, these increases are simply helping bring them closer to restoring pre-recession programs vital to the functioning of schools.

Indeed, as of fiscal year 2017, 22 states still provided less per-pupil K–12 education funding than in 2008–09. Furthermore, as of 2017–18, several of these states provided tax cuts over the last decade, reducing their total tax effort (Leachman, 2019). As of 2016, the percentage of taxable resources spent on K–12 education ranged widely, from 2.3 percent in North Carolina to 5.2 percent in Vermont, with a U.S. average of 3.3 percent (Education Week, 2019b). This variability seems to suggest notable differences between states in taxpayers' willingness to dedicate tax revenues to support education.

A changing student population

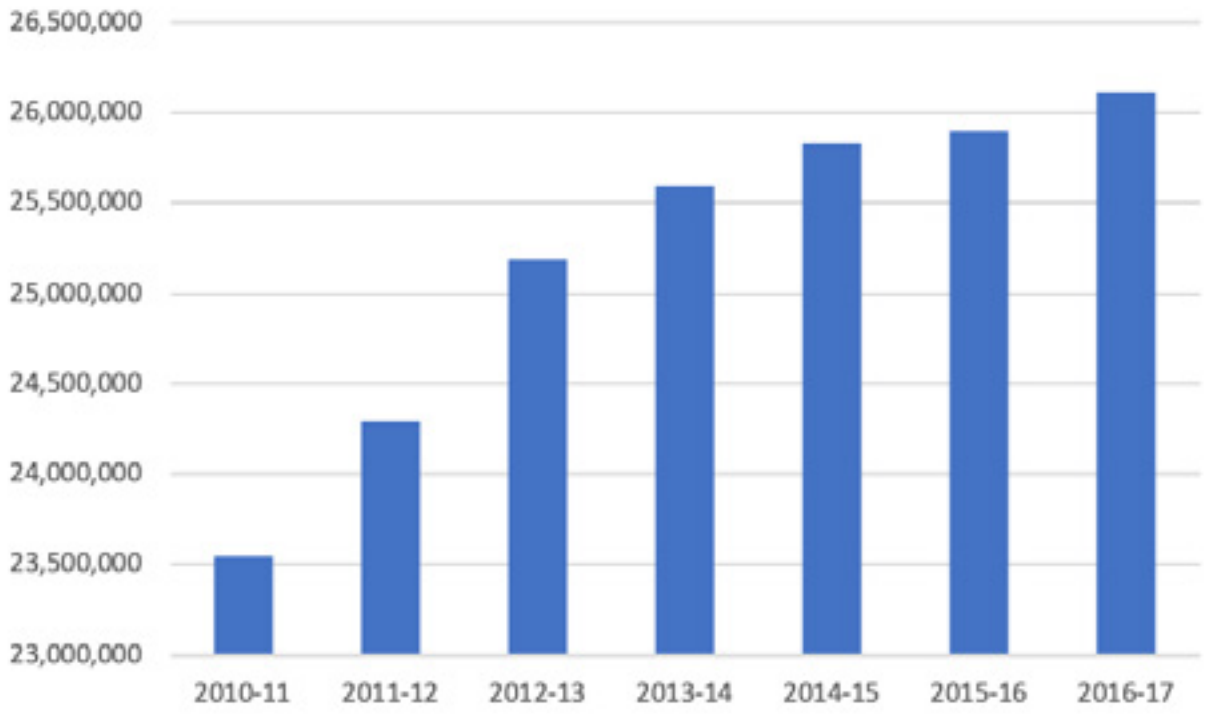
Reports of increased rates of disability, as well as extraordinary student needs and increased investment in whole-child supports, permeated state leaders' interview responses about the rising education costs across the country. Indeed, external factors impacting the nation's student population and contributing to the rise of special education identification rates are well-documented. First, the medical community has a more nuanced understanding of disability and more sensitive diagnostic criteria than it did 20 years ago (Hyman, 2013). One striking example is the increased prevalence of autism, from 1 in 150 in the year 2000 to 1 in 59 in the year 2014, in part due to professionals' ability to properly diagnose the condition, and in part to more children being born with autism (Centers for Disease Control and Prevention [CDC] & National Center on Birth Defects and Developmental Disabilities, 2019). For a school district with 5,000 students, this factor translates to an increase from approximately 33 students with autism in 2000 to 85 students with autism in 2014. Additionally, the preterm birth rate has increased substantially in recent decades, from 6.8 percent in 1990 to 10 percent in 2018 (Martin et al., 2009; CDC & National Center for Chronic Disease Prevention and Health Promotion [NCCDPHP], 2019). Preterm birth rate is significant because it is linked to developmental delay and poor academic performance in school (CDC & NCCDPHP, 2019).

Furthermore, the opioid epidemic has unequivocally devastated families and children across the country, with disproportionately high rates in some states, more infants born suffering from opioid withdrawal, and more children experiencing complex emotional trauma from the loss of adult caregivers and higher rates of placement in foster care (American Academy of Pediatrics, 2019). As one state leader described, the opioid epidemic has visibly raised students' behavioral needs, impacting special education identification in their state: "There are more children being neglected or in foster care, not having their basic needs met. . . . It took us a while to understand the true effects [of the opioid epidemic]." As this state leader noted, "It's not just special education, but all students. . . . It's a worry too that when schools don't know how to handle certain students, then those students end up in special education." These factors play a role both in rising rates of actual disabilities and in increasing emotional and behavioral needs of students without disabilities, both of which can lead to higher rates of identification for special education and greater investment in services to support the whole child, like providing more school counselors, including for younger grades.

Consequently, students with disabilities make up a greater percentage of the student population than they did a decade ago. The number of students ages 3–21 served in special education increased from 6.4 to 7.0 million students, or 12.9 to 13.7 percent of total public school enrollment between 2011–12 and 2017–18 (National Center for Education Statistics, 2019b). During the same period, the field has seen increasing rates of eligibility in higher-cost categories, like autism (National Center for Education Statistics, 2019b; Lavelle et al., 2014). Meanwhile, funding for students with disabilities has not kept pace. As one school finance expert put it, "We have a well-intentioned, appropriate policy to serve special education students and a funding system that is not aligned with that policy."

Changes in the student population served by public schools in the United States are not just isolated to special education (Figure 2). There has also been a 70-percent increase in the number of K–12 students who are experiencing homelessness over the last decade, and over a span of just three years (from 2014 to 2017), 20 states saw their homeless student populations grow by 10 percent or more (National Center for Homeless Education, 2009; National Center for Homeless Education, 2019). Furthermore, the number of students who are English learners has increased from 8.1 percent, or 3.8 million students in fall 2000, to 9.6 percent, or 4.9 million students in fall 2016, and the number of students living in poverty has increased from 48.1 percent in 2010–11 to 52.3 percent in 2016–17 (National Center for Education Statistics, 2019a). Although the needs of all students are different, education leaders must consider where needs overlap and how resources can be leveraged as the needs of students entering public schools continue to evolve.

Figure 2: Enrollment of Free and Reduced Price Lunch–Eligible Students Increasing Since 2010



Source: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "Public Elementary/Secondary School Universe Survey," 2010–11 through 2016–17.

HOW INTERNAL FACTORS CONTRIBUTE TO RISING COSTS

Factors that are internal to education systems and that are contributing to the rise of education costs are equally important but seldom discussed. Major shifts in school policy over the past 20 years have fundamentally changed how and what is taught, as well as how school quality and student performance are measured, often with significant cost implications.

Results-driven accountability impacts teaching and highlights achievement gaps

Cost Pressures | Internal Factors

A key policy shift over the past 20 years has been the increased federal role in state and school accountability systems. The federal No Child Left Behind Act (NCLB) in 2001 tied school accountability to standardized test scores nationally (Dee & Jacob, 2010). NCLB had many consequences, intentional and unintentional, on the U.S. education system. The law led to more rigorous educational standards, and it changed the national rhetoric on school quality and improvement, prioritizing student achievement and the reduction of achievement gaps as the best measures of an initiative's value or impact (Zhao, 2018). Frequently, districts have tried to meet these higher achievement standards — and reduce achievement gaps — by providing additional support for struggling students and by allocating additional funding to programs and services for underperforming students. As one special education researcher described, some of the strategies necessary to address the achievement gap for students with disabilities require substantial investments by school districts: "In this era of school improvement, where schools, districts, and states are held responsible for meeting higher standards of proficiency, there's a greater gap to close to bring that subgroup of students with disabilities up to proficient than there is for others. And we're really figuring out how to close that gap, which has been very costly for some."

Not surprisingly, the pressure to have students perform well on standardized tests and to close achievement gaps impacts how schools organize instruction, how and what teachers teach, and how students spend their time in school. After the passage of NCLB, teachers started spending more time on reading and math instruction — the focus of the high-stakes tests — and implemented more routinized and simplified instructional and assessment practices (Dee & Jacob, 2010; Cochran-Smith & Lytle, 2006). One special education expert noted that special education has been one way to provide individualized instruction for students who need help in this new educational environment. "The kids with disabilities, who were why IDEA was first created — it was not really about kids with specific learning disabilities. It was kids with cognitive disabilities who were literally turned away from school." But more recently, narrowing the scope of what is taught and how teachers teach has disadvantaged students who learn differently. According to the special education expert, "We've made a lot of kids educationally disabled. . . . It's hard to know how much we've exacerbated the problem, the disability, just by giving poor instruction in the core environment." From this perspective, special education cost pressures are deeply tied to the quality of general and other education programs.

These higher expectations for academic outcomes can also increase the pressure and stress on teachers — particularly when teachers feel they are not provided with the support and resources needed to meet students' needs. This dynamic can then exacerbate the nationwide challenge of teacher retention.

A systems-level view of education cost pressures

Considering both the external and internal factors that contribute to rising costs can help state policymakers and local practitioners better understand the challenge and where

schools fit into the solution. Schools have long been tasked with solving some of society's most pressing problems, but there are some things that schools cannot address (Labaree, 2019). For example, solving the opioid epidemic — an external factor — may not be within the scope of the public education system alone. Rather, it requires other public sector services such as health and human services to be active collaborators in bringing resources to bear on the challenge. But changing how success for students is defined, how leaders engage other public sector partners, and how resources are organized to support state goals for student achievement, are all within leaders' control. From this vantage point, local education agencies (LEAs) and states can identify effective avenues of intervention and make smart investments — supporting strong programs and practices while mitigating the effects of outside issues.

Recent events and trends in resource allocation

Recent Trends | How Much

This section describes current trends in state-level funding distribution policy and practice, including the role of the courts in driving changes in state funding formulas, as well as more recent trends in how states are designing their funding formulas to meet student needs.

Taking it to the courts

Funding lawsuits have occurred in 45 of the 50 states. In the majority of cases involving funding adequacy, the plaintiffs have won (Rebell, 2016). Whereas school funding lawsuits prior to the 1990s tended to focus on equity, those in more recent decades — considered the "third wave" in school funding lawsuits (Buszin, 2013) — have more often focused on the adequacy of funding provided to school districts. Specifically, plaintiffs have pointed to state-mandated performance standards for students and argued that by providing insufficient funds to meet these standards, states are not fulfilling their constitutional obligation to students.

While these lawsuits may result in the courts compelling states to provide additional funding to school districts, states do not necessarily make changes to their tax structures to account for these additional investments. This situation can then lead to tradeoffs between funding for K–12 education and other state priorities, such as higher education and various social services, which can jeopardize both the effectiveness and the sustainability of the additional K–12 investments. These court cases may thus represent only partial, short-lived victories for the states' public school systems. If lawmakers view public education as an ongoing investment in improving their states' social and economic outcomes, rather than raising education funding levels to a mandated minimum only when legally compelled to, they may be more likely to establish long-term, sustainable investments in their states' education system.

How much and how well

Furthermore, studies commissioned in the wake of these lawsuits direct attention to the adequacy of funding without considering how the existing set of resources are being leveraged to meet state priorities. When estimating the minimum amount of funding needed for a state's school system, these studies largely presume that existing resources are used with near-maximum effectiveness and efficiency. However, some cost study models have the ability to roughly gauge the actual cost efficiency of the state's school system (using state standardized assessments as the output measure) (Johnes et al., 2017; Taylor et al., 2018; Willis, Krausen, et al., 2019; Willis, Doutre, & Berg-Jacobson, 2019). Although school systems' goals include a much wider variety of outputs than merely assessment scores, this measure of efficiency may provide valuable information to lawmakers and other state leaders as they assess how to revise their states' funding systems.

When state policymakers consider education funding systems — and revising them to meet the needs of the 21st century — it is critical to consider both *how much* funding is needed and *how well* funding is used. That is, alongside ensuring the adequacy of education funding, state leaders must consider how to distribute funding most effectively and equitably, and how to support schools and districts in efficiently and effectively aligning resources with student needs.

Design of state funding models matters

Recent Trends | How Well

In addition to determining funding levels, states control how education funding is structured and distributed through the design of their state's funding system. Each state's K–12 education funding system is modeled slightly differently, but a key decision point in any state is how best to balance targeting funding to support particular student groups based on need and simultaneously providing flexibility so that local leaders can determine how to allocate resources based on their local context. An effective school funding model should provide targeted funds to ensure that spending aligns with state priorities and serves all students equitably, but should also allow sufficient flexibility for school districts to use funds to meet their local needs (Council of Chief State School Officers, [CCSSO] 2017; Cook-Harvey & Stosich, 2016).

The most common funding model is the foundation formula, in which the state determines the minimum amount of funding per pupil (Education Commission of the States, 2019a). The state then estimates each district's ability to contribute local funds and fills in the gap to reach this base per-pupil amount (Chingos & Blagg, 2017). In most states, districts are allowed to raise additional local funds to spend beyond the minimum level. Most foundation formulas determine the minimum amount of funding needed based on a weighted student formula — which provides additional funds for students with greater needs, such as economically disadvantaged students, English learners, students with disabilities — and the formulas vary the funding amount based on grade level (Chingos & Blagg, 2017).

While districts may have substantial flexibility in how to use foundation formula funding, some states also provide a smaller proportion of their funds via grants that are made available for a specific population or category, distributed to LEAs categorically, and required to be used for specific purposes. Historically, many states provided a large proportion of their funding through grants that were distributed categorically and were required to be used for specific purposes. In the past decade, however, states have tended to shift away from funding systems that prescribe the use of funds and have increased local flexibility (Smith et al., 2013). Despite these changing patterns in resource allocation, some state formulas continue to have archaic provisions that work against the desired outcomes of the state. For example, while many states provide additional funding for small school districts (Education Commission of the States, 2019b), the cutoffs for what qualifies as a small district may be arbitrary and obsolete. Consequently, some LEAs may be too small to take advantage of economies of scale but may not meet the decades-old threshold and therefore miss out on essential funds.

From this perspective, special education cost pressures are deeply tied to the quality of general and other education programs.

Which type of school funding model is the most effective?

As one leading education finance researcher described in an interview, state leaders — including state education agency and legislative staff — tend to have a greater understanding of finance formulas today, compared with previous decades. Consequently, as this researcher explained, many states are taking greater responsibility for examining the effectiveness of their school funding systems and are adjusting them as appropriate.

Although there are many important variables involved in school funding models, evidence suggests that systems using foundation formulas tend to be the most effective at ensuring adequacy (Picus et al., 2015). Another positive trend is that states have been refining their funding models to incorporate research-based findings on how states can strategically allocate resources to improve student performance. For example, most states' formulas now distribute additional funds to LEAs based on student characteristics, such as low-income and English learner status. Some states' systems that are

considered high-performing, based on National Assessment of Educational Progress scores, also provide additional funds to account for regional cost differences, district size, and school type (elementary, middle, or high school) (Hinojosa, 2018).

How to align resource allocation approaches to other major policies

States can extend the impact of their resource allocation strategies by aligning them to other key state education policies. For example, the distribution of state funds should be aligned to the state's accountability and support system, and to its state data systems, to ensure that the state's goals for student performance are clearly articulated and supported across major policy areas. Under the Every Student Succeeds Act (ESSA), all states are required to establish statewide systems of support to assist schools identified for improvement. Several states have gone a step further and offer such technical assistance for all LEAs, sometimes utilizing a three-tier model of (1) support for all, (2) targeted support for LEAs identified for additional support, and (3) intensive support for LEAs with persistent or severe underperformance. Meanwhile, improving LEAs' resource allocation is critical to states' role in supporting school improvement efforts. Indeed, in a national 2018 survey of state education agency (SEA) leaders on their school improvement work, "supporting LEA use of funds for school improvement" was the second most frequently identified priority, closely following the top-identified priority, "supporting local needs assessment and data use for school improvement" (CCSSO, 2019).

Which special education funding model is the most effective?

Given the student needs associated with special education, every state provides some additional state funding specifically for special education (Willis, Doutre, & Berg-Jacobson, 2019; Education Commission of the States, 2019c). There is considerable variety in the funding models that states use to distribute these funds; Appendix A includes a list of these options. Some states include special education funding in the state's general funding formula, while others provide separate line items or streams of funding to support special education broadly or through specific programs (e.g., regional services, high-cost funds), and others combine these approaches. States also use different criteria to determine the amount made available for special education and how it is distributed to LEAs. Factors include whether amounts of funding are based on total or estimated student enrollment or based on the actual counts of students with disabilities; whether to classify students into groups including disability, need, or placement categories; and how to calculate single or multiple weights based on disability or specific group status. Most states differentiate funding based on either disability, disability category, or student need. A recent weighting study showed differentiating resources in these ways can lead to improved outcomes for students with disabilities (Willis, Doutre, & Berg-Jacobson, 2019).

In addition to evaluating student need beyond and within a disability category, researchers traditionally determine "effectiveness" of funding based on academic achievement on standardized tests. However, variation in the extent to which students with disabilities are (or are not) cognitively able to meet these standards makes this a poor measure of effectiveness for special education programs. Some students may or may not meet academic standards regardless of the type or level of investment (Harr et al., 2006). Some students with disabilities are also part of other groups, such as gifted students or English learners, and come from schools that have varying levels of quality in their general education programs — factors that would impact their ability to perform well on these measures regardless of the funding for their special education programs. Maryland's recent adequacy study (Willis, Doutre, & Berg-Jacobson, 2019) established a new metric for studying outcomes of students with disabilities: progress toward each student's Individualized Education Program (IEP) goals, adjusted for the amount of time since each IEP goal was developed. Using this measure, along with the need variables and other outcome measures used in a cost function analysis, the study calculated recommendations for increased short-term and long-term investments to effectively reduce the achievement gap for students with disabilities.

This new work builds on prior research attempting to determine the benefits and drawbacks of different special

education funding models. The Maryland adequacy study is one example of how a more nuanced and individualized understanding of student need and student outcomes, gleaned from the required IEP for each student with a disability, might be coupled with other factors to help address the traditional concerns about student weights in special education. Additional studies are needed to continue to understand the best or most effective funding formula for special education. A larger sample of exemplary programs could help researchers link programmatic success with fiscal practices to inform funding models at the local and state levels (Baker et al., 2012).

Like Maryland, other states can commission or conduct studies of their special education funding formulas to determine if they are adequate and equitable. Several other state legislatures have recently invested in such studies (e.g., North Carolina, Idaho, Hawaii), which makes sense given the increasing cost pressures and the fact that many funding formulas for special education were developed in the 1970s and 1980s.

RESOURCE ALLOCATION STRATEGIES IN BUDGET AREAS WITH EXTREME COST PRESSURES

As discussed in the prior sections, changing a state's funding formula is an important and high-leverage approach to improving the distribution of resources to school districts. However, changing a funding formula can take a long time — both to complete a funding study and to get bipartisan support for the change. In the intermediary, states can pursue a range of other changes to their approach to resource allocation, including providing technical assistance to school districts to increase the efficient use of resources to support student needs. Accordingly, states often turn to other strategies to help mitigate education cost pressures and build capacity to support struggling students in the absence of, or in addition to, major funding overhauls. These strategies were captured in the interviews with state leaders and are outlined in the following sections for two budget areas with growing cost pressures: special education and teacher compensation, including pensions.

Special education challenges

Strategies | Special Education

Providing special education services is a unique and growing fiscal challenge. About 14 percent of students are eligible for special education nationally, and over 60 percent of these students receive the majority of their instruction in general education classrooms (National Center for Education Statistics, 2019b). As noted earlier, the number of students served in special education is increasing, including the number of students identified with higher-cost disabilities, like autism (Chambers, Perez, Socias, et al., 2004). Unlike other students, students with disabilities are entitled to an IEP, a plan for how the LEA will meet the child's educational needs and enable the child to make progress in the general education curriculum. An IEP is the blueprint for how the LEA will guarantee that a child receives a free and appropriate public education (FAPE) in the least restrictive environment (LRE) — the core programmatic requirements of the Individuals with Disabilities Education Act (IDEA).

LEAs are obligated to meet the FAPE and LRE requirements of IDEA irrespective of cost. This obligation means LEAs are required to pay for all services in each student's IEP, and the services' cost cannot determine the extent to which the services are or are not included in the IEP. The education of a student with disabilities can therefore be very expensive — approximately twice the cost, on average, of educating a student without a disability (Chambers, Shkolnik, & Perez, 2003; New York State Association of School Business Officials, 2015; Taylor, 2013).

Federal special education funding and fiscal requirements

The U.S. Department of Education provides federal funding (IDEA Section 611 and Section 619 grants) to each state that demonstrates eligibility to pay a portion of the excess costs of providing special education and related services to children with disabilities — that is, the cost of services beyond what is provided to all general education students. When Congress initially enacted the IDEA in 1975, it promised that federal IDEA funding would equal 40 percent of the national average per-pupil expenditure. However, since then, Congress has provided the equivalent of only about 15 percent of the national average per-pupil expenditure — just over a third of the initial promise (U.S. Department of Education, 2018a; Griffith, 2015). At the same time, the percentage of students served in special education has increased, and higher-cost categories such as autism have become more prevalent (Chambers, Perez, Socias, et al., 2004; National Center for Education Statistics, 2019b), making special education more

expensive, while federal funding — which has always been a fraction of what IDEA intended — has not kept pace with the change, placing increased pressure on state and local budgets.

High-stakes fiscal requirements in IDEA may be a barrier to states and LEAs effectively budgeting and expending state and local funds for the education of students with disabilities. For example, the LEA Maintenance of Effort (LEA MOE) requirement states that from year to year, an LEA must budget and spend at least the same amount of local — or state and local — funds for the education of children with disabilities, unless the LEA can demonstrate a qualifying exception (34 CFR §300.203). If an LEA fails to meet the LEA MOE requirement, a portion of its federal funds must be repaid to the federal government. An LEA may hesitate to increase special education spending to improve outcomes or implement new evidence-based practices because it will be held to a higher level of funding to meet LEA MOE in future years. For example, in an interview, one special education expert noted that the LEA MOE requirement can have difficult consequences when LEAs enter high-cost contracts (e.g., for high-severity disability specialists), as LEAs must then maintain that high level of spending.

A parallel potential barrier exists for states; the Maintenance of State Financial Support (MFS) requirement mandates that states make available at least the same amount of state financial support from one year to the next for special education and related services (34 CFR §300.163). The requirement is intended to protect the state contribution toward the education of children with disabilities from year to year. If the state fails MFS, the federal government can reduce subsequent IDEA grants by the amount of the shortfall, while still requiring the state to meet the higher threshold in future years. The U.S. Department of Education has recovered funds from states that did not meet the MFS requirement.

While federal, state, and local funds all are made available to cover the excess costs of providing special education, the responsibility to provide FAPE ultimately falls to each LEA, so local budgets are the most responsive to rising costs. When the combined amount of federal and state special education funding cannot cover the excess costs of providing special education, local funds have to make up the difference. When LEAs face increasing costs, they can advocate or even sue the state for more funding, but the MFS requirement disincentivizes the state from making a one-time contribution directly to special education, as it will be required to maintain that level of financial support in the future. However, if LEAs fail to provide FAPE, states may be ultimately liable as the entity responsible for monitoring LEA compliance with IDEA requirements (20 U.S. Code §1232c).

State-level strategies to mitigate special education cost pressures

Strategies | Special Education

Given the high-stakes requirements and other factors contributing to rising special education cost pressures, many of the strategies suggested by education leaders require cooperation and collaboration, along with shifting the role of the SEA from being simply a compliance monitor to being a responsive technical assistance provider.

States are promoting the effective and efficient use of funds through technical assistance

Seeing the forest through the trees

States can help LEAs use their existing funds efficiently — that is, to spend money on initiatives that have been proven effective or that align with current priorities. The state has the unique, high-level perspective that allows it to see the "forest through the trees"; for instance, state leaders are more likely to see trends and patterns in statewide data and spending, while an LEA might only see immediate budgetary concerns. After analyzing statewide trends, states can use this insight to help LEAs identify the root causes of both improvement and underperformance, and then compare those to budgeting and spending trends across LEAs. One state leader described how their state is trying to help districts in this way: "Sometimes, they don't really have a sense of what is causing some of their poor student outcome data, and then how to align their requests for funding to those needs. And so, by looking at statewide trends, we can use that knowledge to help LEAs figure out what their needs are and how to best meet them."

Focusing on service, not just compliance monitoring

State leaders reported revamping their monitoring processes by redirecting resources and collaborating to provide this type of targeted technical assistance and support for evidence-based practices. Building effective monitoring systems can require that departments break down entrenched silos. While all SEAs are designed differently, they often have a separate office for finance and a separate office for each of their federally funded programs, including special education. Moreover, these offices traditionally have different monitoring systems for programmatic and fiscal requirements. The separation poses some challenges for LEAs. One state leader described how one of their LEAs received nine different state monitoring visits for nine different federal programs in one year. The SEA realized that all those visits required resources from the LEA, which ultimately took time away from focusing on students. To address the challenge, some states are piloting combined monitoring visits. However, combined visits can be costly and may also not be the most efficient use of time in a district where the implementers of the different federal programs are not already working together.

As states try to the find the balance with combined monitoring and piloting new approaches, they can also be intentional about using monitoring and compliance reviews as an opportunity for technical assistance. This shift — from "Gotcha!" to "How can I help you?" monitoring, in the words of one state leader — both fosters and requires a level of trust between the SEA and the LEA. This trust can take time to build. One state leader discussed their SEA's process for transforming its monitoring team into a "program improvement team." Previously, the monitoring team had been looking "strictly at compliance," but after analyzing statewide data, "we started identifying monitoring activities that would lead to improvement in those data." The SEA then collected stakeholder feedback from LEAs that had been monitored, as well as from parents and students, on how to make the monitoring process more helpful. Furthermore, the state leader noted that "it's a continuous process. So every year, we're looking at the data we're getting, we're looking at the feedback we're getting, and then we're identifying what needs to change going forward."

Once the trust is built, the state can effectively provide valuable technical assistance to LEAs on other topics, both fiscal and programmatic. One state leader described providing technical assistance on blending and braiding funds. Another described providing guidance on the collective bargaining agreement process to clarify how placement decisions in special education are made and why contractually limiting the number of students with disabilities in a general education classroom may unintentionally "bargain away FAPE."

In addition, states can help remove the barriers due to LEA MOE by ensuring LEA program and business leaders have a clear understanding of LEA MOE requirements, including the available exceptions and the types of expenses that should be counted toward LEA MOE. It is important that an LEA count expenses consistently from year to year and not mistakenly increase its LEA MOE threshold by including costs for supports for struggling students that are not part of students' special education and related services as defined by their IEPs.

Investing in early intervention

State leaders also noted the importance of using state discretionary dollars to fund opportunities that strengthen connections between general and special education — initiatives like multi-tiered system of supports (MTSS), in which LEAs develop an intervention system that supports all struggling students, not just students with disabilities. A state leader whose state recently made major investments in early intervention systems explained the rationale for this choice: "With any kid, the goal is to have them as independent and self-sufficient as possible. The good news about that is if you can get to them early, get those supports in place, and then over time transition them off those supports, that's going to save you money in the long run." As this state leader pointed out, the preventative effects of intervention systems can yield a significant return on investment by improving student outcomes and reducing more intensive (and expensive) supports a student might otherwise need later on (Schwartz et al., 2019).

As with LEA MOE, states can reduce potential MFS barriers to increasing and providing more effective spending by ensuring that the state's MFS calculation includes only funds made available for special education and related services.

Allocations for schoolwide programs and broad interventions for struggling students — such as positive behavior supports for all students, supplemental interventions for all struggling students, and funds to use MTSS to more effectively identify students in need of additional supports — are not special education services and should not be counted toward MFS, even if some of the students who benefit are students with disabilities who do not have those specific services listed on their IEPs.

Supporting blending and braiding funds

States can also support LEAs in finding more flexible and effective ways to streamline their various available funding streams and reduce redundancies. Two notable methods are blending and braiding funds. Braiding funds is a way for LEAs and schools to use multiple federal and state funding sources to support various parts of an initiative while maintaining the award-specific identity and intended purpose of each funding source. Blending funds allows for more flexibility than braiding funds. In schoolwide programs, eligible grants and other resources are combined under a single set of reporting requirements, and the dollars from each individual funding stream lose the original award-specific identity.

For example, federal law authorizes recipients operating schoolwide programs to consolidate spending from federal, state, and local funds, including IDEA funds, to support the implementation of the schoolwide program as long as the school demonstrates that the program's intent and purpose are met (Title I, Part A, §1114; IDEA Section 613(a)(2)(D)). Combining multiple funding sources to support educational initiatives can ensure consistency and eliminate duplication of services. In addition, the 2004 reauthorization of IDEA includes additional flexibilities for the use of up to 15 percent of IDEA funds for early intervening services to students who need additional academic or behavioral supports but are not identified as students with disabilities.

Starting with student needs

Many students qualify for multiple federal and state programs because of their economic status, language status, disability status, or other qualifiers. Providing technical assistance on how to move from program-centered to child-centered funding decisions, including by blending and braiding program funds, can help an LEA more efficiently deploy resources to meet student needs and avoid duplication in services. One state leader described how they guide LEAs to first focus on student needs, and then, after having decided on strategies, they determine which funding sources can be leveraged to fund the selected strategies. The leader reported telling LEAs, "Let's not have the first conversation be about your subgroup and your funding. Let's talk about the needs of the kids." Then, after selecting strategies to meet those needs, they finally discuss the question "How can you use your budget to do that?" The state leader noted that historically LEAs have too often looked at the potential uses of IDEA, Title I, and other federal funding sources in isolation, and that as a result, "kids with disabilities are accessing multiple interventions, multiple services, and in many instances, it's duplicative."

> *"...by looking at statewide trends, we can use that knowledge to help LEAs figure out what their needs are and how to best meet them."*

Working with state auditors to support funding flexibility

Leveraging programmatic funds in new ways, including braiding and blending, is an important part of efficiently deploying resources to meet student needs. States can encourage that practice by eliminating potential barriers. For example, because federal programs have specific requirements, LEA business managers may worry about audit findings and reporting requirements when using funds in a new way. States that have made efforts to support funding flexibility also reported working with their state auditors to increase the capacity of the state auditors to understand the allowed flexibilities, and working to proactively address potential mistakes and notify auditors early that LEAs were using flexibilities. The states reported that this approach helps increase LEAs' confidence that there would not be negative audit findings for taking advantage of those flexibilities, as long as the

LEAs are meeting the requirements of the federal and state funding streams.

Resolving disputes to avoid litigation

Dispute resolution offers a way for LEAs to avoid entering into costly litigation with parents. The steps in the dispute resolution process — like mediation — are designed to help parties come to a mutual agreement rather than go to a due process hearing, which would be more costly. The first step in a strong dispute resolution process comes well before mediation, when the LEA, school, and IEP team build strong relationships with parents and hold effective IEP meetings. LEA leaders also have reported that building trusting relationships and strong communication with families of students with disabilities can help reduce costly litigation and can create a more appropriate set of services for the students' IEPs (Krausen et al., 2018). The state can provide technical assistance and written resources to LEAs to improve these processes.

Statewide systems promote cost stability across regions

Additionally, states can develop strategies that promote cost stability and protect LEAs from the wide variation and fluctuations of special education costs. While some formulas attempt to provide additional funding for students with more significant needs, it is still challenging to precisely measure the current cost — or predict the future cost — of providing necessary special education services. One strategy to overcome this barrier is to build funding policies based on the assumption that special education costs are more predictable across a geographical area or state than they are at the local level.

A common way to harness this strategy is through state-run high-cost pools, which provide additional funding to LEAs facing a high-cost education program or legal expense for a specific student. While each state is allowed to use a certain percentage of its federal IDEA administrative funds toward a high-cost fund, most states also use state funds for this purpose. High-cost pools protect a portion of funds, and then the SEA distributes them, often through an application process, when high costs arise — thereby protecting qualifying LEAs from local volatility.

High-cost pools do have some drawbacks. They can incentivize more expensive and less inclusive placements, because students in high-cost placements are better able to qualify for the high-cost pool (Tuchman, 2017). Another argument against high-cost pools is that they are reactive rather than proactive — that is, they are designed to bail out an LEA after a high-cost program is in place, rather than providing money upfront for LEAs to develop high-quality, cost-effective programs locally. One state leader noted this tension: "What we're identifying is that there's a reverse incentive. So if districts place their students in a non-public agency, they're basically reimbursed for almost all of the costs. But there's no funding available for them to build capacity to keep the students in [local educational settings]."

At the same time, multiple interviewed state leaders referenced an increase in high-cost placements, citing several of the internal and external factors impacting special education costs. State leaders noted that their high-cost pools are becoming less adequate as more schools apply for the assistance; the pools often do not have sufficient funds to assist all who apply. To avoid incentivizing high-cost placements and to ensure that financial assistance can be provided to a larger number of LEAs, states may want to consider reimbursing LEAs for some, but not all, of the costs associated with high-cost placements.

Helping local education agencies build cost-sharing mechanisms

States can play an important role in protecting small and rural LEAs from the high costs of special education because the costs can be disproportionately devastating to these districts' limited budgets. Small districts spend the most on special education, both in terms of the percentage of overall spending that goes toward special education, as well as average spending for students with disabilities in comparison to their peers without disabilities (Chambers, Parrish et al., 2002). Moreover, low-income and rural districts are disproportionately affected by shortages of special education teachers and other professional staff (Collaboration for Effective Educator

Development, Accountability and Reform, 2016). Because of these challenges, states can develop strategies to encourage districts to band together to benefit from economies of scale — for instance, through educational service agencies (ESAs), consortia, collective purchasing, consolidation, and/or virtual service provision.

Educational service agencies

ESAs (sometimes called intermediate agencies, regional service agencies, or other terms) are agencies authorized by state law to develop, manage, and provide services or programs to LEAs for special education and related services in a state (34 CFR §300.12). ESAs can help LEAs benefit from economies of scale by pooling resources to purchase services that would otherwise be cost-prohibitive, such as a full-time speech pathologist. In some cases, ESAs also run high-cost pools just for the LEAs in their region. Some states require LEAs to join an ESA to coordinate and develop a plan for the provision of special education regionally. ESAs often receive funding directly from the state to support their work, and many also provide services for a fee to the LEAs in their area.

Consortia

Consortia (sometimes called cooperatives, or shared service agreements) form when two or more LEAs band together to share human resources, purchasing costs, or programs. While states typically do not fund consortia directly, they can still encourage the practice. For example, one state leader described how the state provides resources on its website regarding shared service agreements and offers technical assistance to streamline the agreements.

Collective purchasing

A major benefit of ESAs and consortia is the ability to make bulk purchases or negotiate for the same rate of service across a geographical area. Collective purchasing can also happen at the state level to offset otherwise high-cost products. For example, one state leader described purchasing a statewide online IEP system to reduce the burden on small and rural districts. "If there are things that we feel like we could do at the state level to make things available for districts and release some of that burden, we try to do that," the leader explained. So now, the 140 school districts that opted to use the state's IEP system "aren't having to make that investment because we're . . . [doing] as much as we can to free up more of the local funding to address student-specific needs."

Consolidation of small districts

Some states are also incentivizing small LEAs to consolidate to become larger LEAs. Consolidation tends to be tricky because any two LEAs often have two distinct school boards and sets of district office staff, making the politics of combining them difficult to navigate. Issues of race and class can also dissuade LEAs from consolidating. Despite these challenges, some states encourage districts to explore this option, even providing financial incentives to make the change. As one state leader described, consolidation can provide significant financial benefits in the long run: "For two very small districts, you are running two separate district offices . . . two of everything. And so if you combine those two smaller districts, then your overhead technically should be cut, because you're running things with one district staff." To promote this cost-efficiency, the state leader explained, "For districts that are very small, our legislature has provided some incentive funding to consolidate."

Virtual service provision

Even with regional cost-sharing mechanisms in place, there are still instances in which LEAs cannot access the service providers they need. For example, state leaders interviewed for this study noted that special education staff shortages have exacerbated cost pressures, with many LEAs particularly struggling to find specialists for low-incidence, high-severity disabilities. State leaders reported that due to the dearth of available specialists, LEAs must often bring in high-cost contractors. As one state leader explained, "The law doesn't care that you're having difficulty finding service providers. . . . The law says that each one of these children is entitled to a free appropriate public education." If an LEA fails to provide the services in a student's IEP, the LEA can face expensive legal proceedings.

According to state leaders, to meet the challenge of accessing service providers, the practice of online or virtual service provision is expanding, especially in small and rural districts. New virtual conferencing technology makes this option possible as long as virtual service provision is permitted by the state and the regions have internet access, though peer-reviewed research is not yet available on the effectiveness of remote service provision across a wide range of special education eligibility categories. Because virtual service provision can be more accessible and affordable than hiring a full-time staff person — particularly in areas with a dearth of qualified specialists — it may offer a cost-effective solution to meeting students' specialized needs.

Compensation and pensions: The challenge

Strategies | Special Education

In addition to highlighting cost pressures related to special education, state leaders frequently identified teacher and classified staff compensation, including both salaries and benefits, as a top fiscal challenge. The challenge is twofold. First, the cost of educational staff's compensation has been rising steeply. This increase is due primarily to increases in the cost of benefits — particularly pensions and, to a lesser extent, healthcare. Additionally, to meet students' needs, schools have hired a higher proportion of support staff; from fiscal year 1992 to fiscal year 2015, public schools' student enrollment increased by 20 percent, but non-teaching staff increased by 47 percent (Scafidi, 2017). States and districts struggle to cover the fiscal obligation of total staff compensation, which continues to rise.

Second, even though staff compensation is consuming larger proportions of education budgets, teacher salaries have remained flat, and in some cases, declined. Meanwhile, evidence suggests that today's teachers care more about take-home pay than about potential retirement benefits (Fitzpatrick, 2015). With limited resources available for total staff compensation, education leaders and researchers suggest that states should consider funding for salaries and benefits holistically — rather than in isolation — and redesign compensation structures to more effectively recruit and retain the 21st-century educator workforce.

Staff benefits, particularly pensions, are consuming larger portions of education budgets

The proportion of K–12 education spending that goes toward employee benefits has been steadily creeping up over time nationally. In 2000–01, employee benefits accounted for approximately 17 percent of total per-pupil spending nationwide; by 2015–16, benefits accounted for 23 percent of total per-pupil spending (Figure 3; National Center for Education Statistics, 2018).

Figure 3. Employee Benefits Represent an Increasingly Large Share of Public School Expenditures

Source: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "National Public Education Financial Survey," 1990–91 through 2015–16.

Rising pension obligations have been responsible for the bulk of this increase; nationwide, state and district spending on teacher pensions rose from $15 billion per year in 2001 to over $40 billion in 2016 (Aldeman & Rotherham, 2019).

At the root of this problem is the structure of a traditional pension plan. A traditional pension refers to a defined benefit plan, which guarantees a set amount of income for retirees. This amount of income is determined by a formula based on years of service and salary, rather than on the actual value of invested contributions. Ninety percent of public school teachers are enrolled in this type of plan (Aldeman & Vang, 2019). By contrast, the most common type of retirement plan for private sector employees is a defined contribution plan, such as a 401(k) (U.S. Bureau of Labor Statistics, 2018). With a defined contribution plan, retirees' income is determined by the value of the employer's and employee's contributions to the account over the course of the employee's lifetime, plus investment returns.

A major structural problem with traditional pensions — which are defined benefit plans — is that governments are not required to set aside sufficient funding in advance to provide the benefits that the plans promise (Liljenquist, 2015). In addition, defined benefit plans often assume an unrealistically high rate of return, thereby requiring lower contributions and promising higher benefits. For example, an analysis of 66 U.S. state pension plans' performance between 2000 and 2018 found that collectively these funds earned an average return of 5.87 percent, far below the 7.75 percent average assumed rate of return (Cliffwater LLC, 2019).

This incongruity results in unfunded liabilities: a deficit created by the gap between promised benefits and actual funds set aside to provide those benefits. In order to pay retirees' promised benefits, states then face the choice of: (a) allowing unfunded liabilities (i.e., debt) to continue to grow, (b) generating additional revenue (such as by raising taxes), (c) making cuts to other public services, and/or (d) shifting more

of the financial burden to districts, which then must make similarly difficult choices (Liljenquist, 2015).

Pension costs are likely the most "silent" of the Silent Recession fiscal pressures

For pension costs, it is possible, to an extent, to continue kicking the can down the road — that is, allowing unfunded liabilities to continue to grow because pension obligations are less visible than other cost pressures and not easy to understand, as they are based on complicated retirement and earnings forecasts. In interviews for this study, state leaders had less to say about the issue of pensions than any other topic. Even when acknowledging that pensions were a major fiscal pressure, state leaders did not mention any significant efforts that their states were making to address this issue. Meanwhile, as one education finance leader described, pension obligations are silently "siphoning dollars out" of the rest of the education system.

The issue of pension costs is more visible in some states than in others. For example, as one leading expert in pensions pointed out, pension costs have gained more visibility in California than in many other states because in California "a lot of that cost is coming directly out of the school districts' budgets. A lot of other states are just paying that off the top, before the district even sees it." To address the issue of unfunded liabilities, the California Legislature in 2014 passed a law to substantially increase school districts' and the state government's contributions to the state's teacher pension system, and since 2010, the state's pension system has steadily decreased its assumed rate of return (Koedel, 2018).

Although the impact of rising pension costs may be less visible in some states — where dollars flow directly from the state budget into the pension fund — the unsustainability of current pension systems presents major risks for the next recession. In an economic downturn, some of these state pension systems could face insolvency — the complete depletion of pension plan assets (Mennis, Banta, & Draine, 2018).

21st-century school employees place a higher value on take-home pay

Pension plans were initially intended to serve as recruitment and retention tools for public sector employees. As one education finance expert explained, "The old social contract of being a teacher is that you would be paid less compared to your value in the market for your degree level . . . in exchange for benefits that offer stability, such as healthcare and a pension." However, many employees no longer see this trade-off as worth it. Indeed, a study of Illinois public school employees found that when asked to weigh the value of current dollars against future retirement benefits, employees were willing to pay an average of only 20 cents in exchange for a dollar of expected retirement benefits — a fraction of the actual cost for the system to provide these benefits (Fitzpatrick, 2015).

One reason for school employees' preference for higher take-home pay over retirement benefits may be the increased cost of living in many areas across the United States. As one state leader described, "When you're living in an area where even just general professional folks are struggling with cost of living — that's nice that you're going to have a nice retirement, or some retirement stability, but right now, you can't afford the rent."

Another reason why individuals in today's workforce are less likely to value traditional pension plans is because today's teachers are more likely to change jobs or move, and so they are less likely to be eligible to collect full retirement benefits. Pension plans often penalize teachers not just for leaving the teaching profession but also for moving between states (Aldeman & Rotherham, 2014; Aldeman & Vang, 2019).

Traditional pension plans disproportionately benefit a small number of teachers

Due to their structure, defined benefit pension plans are most beneficial to the small number of teachers who stay in the system the longest (Aldeman & Vang, 2019). Indeed, a 2014 analysis estimated that, on average, fewer than 20 percent

of new teachers nationwide would meet the retirement age requirements to receive full benefits from their state pension systems (Aldeman & Rotherham, 2014).

One leading pensions expert remarked that the views of "rank and file teachers," as opposed to teacher labor groups, are often missing from conversations about teacher pension reform. As this researcher described, young teachers may be disadvantaged by traditional pension plans as districts are increasingly required to make larger payments to cover their pension obligations, which may lead to lower salaries for current teachers. Meanwhile, "it's the older teachers, in their 50s and 60s, who get into the teacher labor groups. They drown out the voices of the younger teachers, who the data say aren't benefiting from this."

Pension systems can also exacerbate inequities between poor and affluent districts, particularly in systems where the state makes pension contributions directly on behalf of districts. Affluent districts tend to have higher average teacher salaries and greater teacher longevity, and because pension plans' formulas are based primarily on these two factors, the state's pension contributions for those teachers are higher (Marchitello, 2017; Shuls et al., 2019). Consequently, through the pension system, a disproportionate amount of state dollars are flowing to compensate teachers in more affluent districts.

Teacher salaries remain flat or have declined

Although evidence suggests that teachers value present-day dollars over future retirement benefits, inflation-adjusted teacher salaries, on average, have remained stagnant over the last three decades, and they have even declined in most states in recent years (Katz et al., 2018). Furthermore, the gap between public school teacher wages and those of comparable professionals has widened severely. In 1979, teachers earned 5.5 percent less than comparable professionals; in 2017, they earned 18.7 percent less. In recent years, teacher strikes have seized headlines nationwide, as teachers demand better working conditions and higher pay (Partelow & Quirk, 2019).

Several state leaders reported challenges with educator recruitment and retention, with low teacher salaries playing a role. Some noted that districts in metropolitan areas were more likely to have teacher strikes and to feel pressure to increase teacher salaries, due to the high cost of living in these areas. Research indicates that across the United States, teacher salaries have not kept pace with increases in the cost of living. In 30 states, the average teacher salary does not cover a family's basic living wage, and in the other 20 states, the average teacher salary is only 9 percent above a family's basic living wage (Katz et al., 2018).

Meanwhile, as several state leaders described, students' behavioral and mental health needs are growing, and there are not enough resources to meet those needs. Consequently, as one researcher pointed out, not only has teacher compensation failed to keep up with today's standards, but teachers' jobs are becoming more difficult. "So we're paying people less, to do a job that isn't as valued, to work with kids that are harder [to serve], to meet standards that we've never met before. . . . No wonder it's a hard nut to crack right now."

Creating sustainable compensation and retirement systems

Strategies | Staff Compensation

To address the dual challenges of (1) creating a more sustainable retirement system and (2) improving teacher recruitment and retention, state education leaders noted the importance of considering these issues holistically, rather than in isolation.

Pension reform requires small and big fixes

One education finance expert interviewed for this study compared the pension system to an oil spill. First, leaders need to stop the oil from gushing — that is, they need to stop the current pension policies that are building up debt. Secondly, they need to clean up the oil — that is, pay off the debt. For the retirement system to be sustainable, both must occur. To determine what adjustments need to be made, an increasing number of states are implementing "stress tests" of their pension systems. These analyses assess how an economic downturn would impact the pension system, informing policymakers on what steps must be taken to avoid fiscal crises and improve plans' sustainability (Mennis & Fehr, 2018).

In an effort to "cap the oil spill," most states have begun by making minor adjustments to current pension systems — most frequently, by reducing retirement benefits for new teachers and by raising current teachers' required contributions (Aldeman & Vang, 2019; Doherty et al., 2012). Many have also lowered the assumed rate of return to more realistic, conservative levels, thereby lowering the promised benefits for future retirees (Pew Charitable Trusts, 2018).

These incremental steps have somewhat improved the sustainability of current pension systems, but they are not without problems of their own. First, in some states, the level of change thus far has not been sufficient to stop the accrual of unfunded liabilities. Moreover, the changes that have happened in some states are exerting additional fiscal pressure on districts. Most notably, while lowering the assumed rate of return makes the system more sustainable in the long term, it increases employers' required contributions now (Pew Charitable Trusts, 2018). This increase is because a lower assumed rate of return means that more must be collected today to ensure resources are available to pay promised benefits in the future. The lower rate of return is agreed upon by financial economists as being more fiscally prudent and accurate, but the higher assumed rates of return that had previously been used hid the higher costs. The lower assumed rates of return that states are shifting to mean that a larger pension obligation today needs to be filled by employers or the state. This shift is being achieved by reducing teachers' take-home pay (by requiring greater employee contributions or stunting wage growth) and/or their future benefits. Such reductions may be counterproductive to states' goals of improving teacher recruitment and retention.

To "clean up" the oil spill, states must reduce and eliminate unfunded liabilities. Some states are making investments to pay down pension debt and reduce district contributions. For example, California's 2019–20 budget includes a $3.15 billion General Fund payment to the state's teacher pension plan, both to pay down some of the unfunded liabilities and to ameliorate districts' steep pension contribution increases (State of California, 2019). However, with U.S. teacher pension systems collectively carrying around half a trillion dollars in unfunded liabilities (Doherty et al., 2017), paying off this debt will undoubtedly require increasing total revenue, rather than merely shifting additional funds from elsewhere in the state budget.

Alternative types of retirement plans may hold promise

Several states have begun transitioning their teacher retirement systems to alternative types of plans. These include 401(k)-style defined contribution plans; "hybrid" plans that combine a smaller defined contribution plan with a smaller defined-benefit plan; and a more conservative type of defined-benefit plan called a "cash balance" plan. For example, Alaska enrolls all new teachers into a defined contribution plan, while Florida, Michigan, Ohio, South Carolina, and Utah offer this plan as a choice; Indiana, Oregon, Rhode Island, Tennessee, and Virginia enroll new teachers into hybrid plans; and Nebraska and Kansas enroll new teachers into cash balance plans (Aldeman & Vang, 2019).

Each of these plans offers less risk of unfunded liabilities than do traditional defined-benefit plans. Furthermore, analyses have found that each of these alternatives could offer adequate retirement savings to a larger group of employees than a traditional plan, which reserves the most substantial benefits for those who stay in a single system the longest (Aldeman & Vang, 2019). Additionally, each of these plans offers greater portability, allowing teachers to collect their retirement savings even if they move between states (Aldeman & Vang, 2019).

Restructuring statewide salary schedules

State leaders and education finance researchers alike described how states are recognizing the need to reallocate resources in ways that more effectively recruit and retain new teachers. This shift may involve taking a more "hands-on" approach — for instance, by implementing or revising statewide teacher salary schedules. As of 2018, 14 states maintained statewide teacher salary schedules, which set the minimum salary level for teachers for each year of service (National Council on Teacher Quality, 2018). In other cases, state efforts to improve the effectiveness of teacher compensation may require providing more local flexibility.

Through statewide salary schedules, states can play a leadership role in distributing teacher compensation more effectively. For example, one education finance researcher described how, just as retirement systems can be restructured so that benefits are no longer "backloaded" to a relatively small number of veteran teachers, teacher salary schedules can also be revised to become more equitable and appealing to newer teachers. To do so, "we need to change the shape of the curve, so that teachers can earn more faster." Otherwise, when states approve increases in teacher compensation, much of that funding will "go to the teachers at the top of the salary schedule . . . [and] most of those teachers weren't going to leave anyway." Even in states without statewide salary schedules, state education leaders can take a more active voice in advising school districts on effective practices for partnering with local unions and strengthening local salary schedules to best serve all teachers.

To maximize the effectiveness of teacher compensation, state leaders also noted the need to balance their guidance with sufficient local flexibility. For example, state policies such as class size limits can, as noted by one education leader, restrict the district's ability to reallocate funding for teacher professional development or other areas of local need.

Market surveys and regular reviews of teacher salaries

Leaders from two states described state-level efforts to first raise teacher salaries to competitive rates and, second, use periodic market surveys to ensure that salaries remain competitive. In one state that recently passed legislation to increase teacher salaries, the statewide salary schedule increased salaries for all teachers and included a regionalization factor so that, as the state leader described, teachers receive "a fair wage, so they can live where they work." Additionally, the legislation requires that the state review and adjust staff salaries every six years, keeping them on par with market rates, along with annual increases for inflation. As the state leader described, this approach can also provide more stability for the state by allowing it to "just make small adjustments [to funding levels] each year, rather than needing massive changes with new revenue sources all of a sudden. . . . We're trying really hard to make sure we don't fall behind again."

Another state leader described similar efforts that their state is currently considering. As this leader described, the state commissioned "an extensive and rigorous gap analysis," comparing the state's current educational policies and practices with those of several high-performing neighboring states, as well as high-performing international education systems. The analysis's recommendations, which the state is now looking at implementing, include raising teacher salaries so they are comparable to other occupations requiring similar education levels.

Teacher leadership opportunities and career ladders may improve retention

Education differs from most industries in that increases in salary are primarily driven by years of service, rather than by performance or by taking on more advanced responsibilities (Natale et al., 2013). However, for today's teachers, this situation can be a major source of dissatisfaction and can contribute to attrition. A recent Gallup poll found that of teachers who left their jobs voluntarily due to job-related reasons (as opposed to personal reasons like health or family relocation), the most frequently cited reason, by a wide margin, was a lack of opportunities for career advancement or development (McFeely, 2018).

From the early 1980s to the early 1990s, over 30 states considered or implemented some type of career ladder to differentiate teacher salaries and provide teacher leadership opportunities; however, few made significant funding commitments to support such programs (Natale et al., 2013). Among the few states that did implement long-lived teacher career ladders, these initiatives proved successful but were ultimately ended due to a lack of state financial support. As an education finance researcher described, "We should be having some modest increases based on experience, but really coupling most of the increased spending [based] on high-need roles and roles that require expertise and leadership."

Investments in higher education and loan forgiveness programs for incoming teachers

The strategy that interviewed state leaders described most frequently was that their states have increased investments in credentialing and certification programs in an effort to increase the educator pipeline. Indeed, the pipeline of new teachers has shrunk dramatically, from roughly 684,000 students enrolled in teacher credentialing programs in 2010–11 to roughly 444,000 students in 2016–17 (U.S. Department of Education, 2018b). Consequently, states are investing in service scholarship or loan forgiveness programs, in which the state funds the cost of educator preparation in exchange for a number of years of service.

While some states have long supported such programs, an increasing number of states are starting or expanding these programs, particularly for high-need and hard-to-staff locations and subject areas (Espinoza et al., 2018). For example, several state leaders described investments in higher education, credentialing, and certificate programs targeted toward increasing the number of special education staff. One state leader described how over 17 years, their state-sponsored program has produced over 1,000 special education teachers and specialists. Other states, such as North Carolina and Nebraska, similarly have service scholarship or loan forgiveness programs with long-standing track records of successfully improving both educator retention and educator effectiveness in shortage areas (Espinoza et al., 2018).

DEVELOPING LONG-TERM PLANS FOR REVENUE GENERATION THAT ARE RESPONSIVE TO RISING COSTS AND EXPECTATIONS FOR STUDENTS

Connecting statewide educational goals to the state budgeting process

Although many of the aforementioned strategies may be accomplished by simply reallocating existing education funds, many state education leaders also noted the need to generate additional resources for K–12 education. Rather than diverting state funds from other areas of the state budget, generating additional state revenue can offer a more effective and sustainable solution. Accordingly, state leaders suggested the need to develop long-term plans for revenue generation that are responsive to rising costs and expectations for students.

State leaders suggested that a necessary first step is to work with policymakers to better understand the existing set of resources and how they are being deployed to support student needs. Next, state leaders emphasized the need for greater awareness of the dire fiscal situation that some school districts face: rising costs, rising expectations, and funding that has only been playing "catch up" to pre-recession levels. State leaders suggested that a further next step is to work with lawmakers to reconcile the state's expectations for student achievement with the resource levels to meet those goals, and with the available state revenue to support ongoing education funding. Finally, state education leaders also suggested working with policymakers on strategies for raising additional revenue, including identifying potential new funding streams, and through establishing cohesive, compelling messaging.

State leaders frequently described how conversations around school improvement tend to be disconnected from the reality that to do more — and even to maintain current services — schools need more funding. As one state leader described, when meeting with lawmakers, "We talk about needing money, and then we talk about needing improved outcomes, and we haven't connected them. There hasn't been a tangible connection by the legislature." As this state leader's comments suggest, the state's goals for student performance should form the basis for discussions about the level of funding allocated to education.

Given the complexity of understanding how much funding is necessary to achieve a specific set of outcomes for students, many states tend to develop their budgets based on historical funding levels. However, to design a funding system that effectively supports the state's education goals, states should first establish clear, measurable targets for student achievement and then determine and provide the necessary education funding to achieve these goals. While states do establish specific, measurable goals in their ESSA plans — for instance, a statewide graduation rate of 85 percent and statewide math and English Language Arts proficiency rates of 80 percent — states rarely use these goals to calculate annual education funding.

Some states have conducted cost adequacy studies, usually in response to adequacy lawsuits, to attempt to estimate the costs necessary to meet statewide education goals. However, rather than waiting for lawsuits, states should consistently consider the real costs of meeting state education goals and incorporate these discussions into their annual state budgeting process.

Connecting state funding to revenue generation

State leaders emphasized that to sustainably increase investments in education, states must generate additional revenue. Without the generation of new sources of funding, the state is left with difficult choices around how to reallocate funding from the existing pot of resources, likely reducing funding in other areas of the budget. For example, when discussing the education system's imperative to meet the rising needs of students with disabilities, one leader explained, "For every action, there's an equal and opposite reaction. There's no magic. If you have to spend more on special ed, and you're not increasing your overall budget, you have to reallocate from other priorities."

Another education leader noted that legislators have "gotten pretty comfortable saying, 'I really am for education . . . but my hands are tied'" when it comes to allocating more funding to it. This leader described that having lawmakers acknowledge the need for additional revenue generation is critical, as "changing tax policy is really the only way they're going to do any meaningful kind of financial support for school districts."

State leaders can play an important role in helping policymakers understand how additional revenues could be used to better support students. One state leader described how once lawmakers fully understand the need for increased investments for education, they are more likely to recognize that current state revenue isn't sufficient. As this leader reported, "It doesn't feel as much like a budget issue from the state perspective; it's more of a revenue problem." As this state leader summarized, "We're talking about funding kind of 'siloed' from revenue, and . . . when you're talking about places where you need to be making big investments, [you need] to also talk about the reality that that money needs to come from somewhere."

Identifying new revenue sources

Most state leaders noted that even when lawmakers and voters understand the urgent need for more education funding, obtaining legislative or voter approval for tax increases can be very difficult. As one leader said, "despite general consensus across the board that more money needs to come into the system" and bipartisan support for more education funding within their state, legislative action was still very slow in coming.

Consequently, several leaders noted the value of identifying new, untapped sources of revenue. For example, one state leader described how their state now collects sales tax from online retailers and earmarks these funds for education. This leader also described how voters approved a measure to use casino funds as supplemental education funds. Another state leader remarked that "sin" taxes in general, including the legalization and taxation of marijuana, may have an easier time gaining voter support.

Establishing new revenue sources can be particularly important for funding mandated requirements that, while underfunded, lack the appeal of new education programs. For example, one education finance expert described how states rarely pay down unfunded pension liabilities unless they uncover new streams of revenue. As this expert explained, "If every year, states are making a choice between pensions or something else, they often pick something else." Rather, to avoid competing with other priorities, states should try to identify "a dedicated revenue stream, whether that's lotteries, property sale, a bond, or something else, that could make it more concrete."

Changing the narrative from underfunding to innovation

Strategies | Revenue Generation

Finally, state leaders who succeeded in obtaining buy-in from legislators and other key stakeholders on the need for increased revenue noted that building a shared mission and vision was critical to their appeal. These leaders discovered that others were more likely to listen when the narrative focused on how to enhance the system and improve student outcomes, rather than just on the fact that the education system is underfunded. As one state leader described, "It can't be: If you give me the money, then I can at least do what I have to do. It has to be: If you give me this opportunity, I could expand what I'm doing and take it to another level of innovation."

Another state leader spoke about developing a set of state priorities in partnership with stakeholder groups and focusing not just on underfunding but on what needs to change in the system. That state's leaders then used these priorities to stay on message when requesting more funding from the legislature, disseminating the priorities to advocacy groups to ensure consistent messaging. The state leader also described regularly meeting and talking with legislators, including to review and discuss the state's education strategic plans. The leader also brought one legislator on tours to observe programs in schools. According to the state leader, this close collaboration has helped strengthen relationships with legislators and has created a sense of shared ownership over improving the education system: "They feel like I'm not hiding things [and] that we're all in it together." The state's advocacy and relationship-building efforts succeeded in adding millions of dollars into the state's special education budget over multiple years. In addition, the state's education leaders successfully obtained literacy grants, grants for inclusive practices, personnel development grants, and climate transformation grants.

CONCLUSION

State leaders are uniquely positioned to support school districts during difficult budget periods in numerous ways, including:

- through the design of their state funding formulas,
- by aligning resource allocations with other major education policy areas and with the state's goals for student achievement, and
- by developing long-term plans for revenue generation that are responsive to rising costs and expectations for students.

For special education, states can also support school districts by providing technical assistance on increasing the effective use of resources to support student needs, and by building funding policies based on the assumption that special education costs are more predictable across a geographical area or state than they are at the local level. For teacher compensation, state leaders should consider the dual challenges of creating a more sustainable retirement system and improving teacher recruitment and retention holistically, rather than in isolation.

All of these strategies require state education leaders to work in partnership with lawmakers and local education leaders to define and clearly articulate their vision for the best use of existing resources, and any new revenues streams, to improve student outcomes.

Accordingly, most state leaders who were interviewed for this report articulated an intentional move away from a role as merely a monitor of state funding to a role of advocate for the strategic deployment of resources to support student outcomes. State leaders also demonstrated a growing interest in and ability to serve in a convener role, bringing together leaders across state agencies as well as stakeholders from across the system to inform investments in educational programs and services. This focus on collaboration and changing the narrative around education funding is critical as state education leaders and policymakers tackle the complexity of rising cost pressures in special education and teacher pensions and compensation, and as they seek to raise new revenues to support innovation in education. Furthermore, state leaders play a critical role in continuing to put students and their needs at the center of all budget decisions, beginning the budget process by clearly articulating the needs of students and how resource allocation decisions connect to the state's goals for student performance.

External factors, like rising student needs, may be out of the state's control, and internal factors, like how schools measure success, may take time to change. However, many states have implemented more immediate ways to address rising costs and to curb growth in unfunded liabilities. SEAs are increasingly supplementing programmatic, compliance-based monitoring with increased supports and technical assistance grounded in evidence-based practice and outcomes data, helping LEAs to stay focused on student needs and to think holistically about how different funding sources can support programs. States are also creating avenues for LEAs to support each other through cost-sharing mechanisms like consortia and by funding statewide structures such as high-cost pools for special education.

These strategies allow state leaders to focus not just on how much funding is needed to support students but also on how well existing resource allocation practices are supporting improved outcomes for students. Perhaps most importantly, states are engaged in the long-term adaptive work of building relationships with policymakers and advocacy groups, developing strategic plans that focus on investment in prevention and early intervention, and studying their funding formulas to ensure alignment with state priorities. In doing so, state education leaders have an opportunity to put students at the center of resource allocation decisions and to ensure resources support more equitable access to quality learning opportunities for all students.

REFERENCES

Aldeman, C., & Rotherham, A. J. (2014). *Friends without benefits: How states systematically shortchange teachers' retirement and threaten their retirement security.* Bellwether Education Partners. http://bellwethereducation.org/sites/default/files/BW_PensionPaper_031314.pdf

Aldeman, C., & Rotherham, A. J. (2019). *Teacher pension plans: How they work, and how they affect recruitment, retention, and equity.* Bellwether Education Partners. https://bellwethereducation.org/publication/teacher-pension-plans-how-they-work-and-how-they-affect-recruitment-retention-and-equity

Aldeman, C., & Vang, M. (2019). *Insufficient: How state pension plans leave teachers with inadequate retirement savings.* Bellwether Education Partners. https://bellwethereducation.org/publication/insufficient-how-state-pension-plans-leave-teachers-inadequate-retirement-savings

American Academy of Pediatrics. (2019). *America's opioid crisis: The unseen impact on children.* Opioid Crisis Fact Sheet. American Academy of Pediatrics. https://adaa.org/sites/default/files/opioid_fs_united_states.pdf

Baker, B., Green, P., & Ramsey, M. (2012). "Financing education for children with special needs," in Crockett et al. (Eds.), *Handbook of leadership and administration for special education*. Routledge.

Booker, K., & Glazerman, S. (2009). *Effects of the Missouri Career Ladder Program on teacher mobility.* Mathematica Policy Research inc.

Buszin, J. S. (2013). Beyond school finance: Refocusing education reform litigation to realize the deferred dream of education equality and adequacy. *Emory Law Journal, 62*(6), 1613–1657. http://law.emory.edu/elj/content/volume-62/issue-6/comments/beyond-school-finance.html

Centers for Disease Control and Prevention, & National Center for Chronic Disease Prevention and Health Promotion, Division of Reproductive Health. (2019). *Preterm birth*. https://www.cdc.gov/reproductivehealth/maternalinfant-health/pretermbirth.htm

Centers for Disease Control and Prevention, & National Center on Birth Defects and Developmental Disabilities. (2019). *Data and statistics on autism spectrum disorder.* https://www.cdc.gov/ncbddd/autism/data.html

Chambers, J. G., Parrish, T. B., Esra, P. E., & Shkolnik, J. L. (2002). *How does spending on special education students vary across districts? An analysis of spending by urbanicity, district size, median family income, and student poverty levels in 1999–2000.* Report of the Special Education Expenditure Project. U.S. Department of Education, Office of Special Education Programs.

Chambers, J., Perez, M., Socias, M., Shkolnik, J., & Esra, P. (2004). *Educating students with disabilities: Comparing methods for explaining expenditure variation*. Report of the Special Education Expenditure Project. U.S. Department of Education, Office of Special Education Programs.

Chambers, J. G., Shkolnik, J., & Perez, M. (2003). *Total expenditures for students with disabilities, 1999–2000: Spending variation by disability.* Report of the Special Education Expenditure Project. U.S. Department of Education, Office of Special Education Programs.

Chingos, M. M., & Blagg, K. (2017). *Making sense of state school funding policy.* Urban Institute. https://www.urban.org/sites/default/files/publication/94961/making-sense-of-state-school-funding-policy_0.pdf

Cliffwater LLC. (2019). *An examination of state pension performance, 2000 to 2018.* https://www.cliffwater.com/reader/viewer.html?file=%2FResearch%2FFileDownload%3Fpath%3Ddocs%252FAn%2BExamination%2Bof%2BState%2BPension%2BPerformance%2B2000-2018.pdf%26title%3DAn+Examination+of+State+Pension+Performance+2000-2018%26VGltZXN0YW1w%3DMDMvMTgvMjAxOSAxNDo0OTowNg%3D%3D&title=An%20Examination%20of%20State%20Pension%20Performance%202000-2018

Cochran-Smith, M., & Lytle, S. (2006). Troubling images of teaching in No Child Left Behind. *Harvard Educational Review, 76*(4), 668–697. https://hepgjournals.org/doi/10.17763/haer.76.4.56v8881368215714

Collaboration for Effective Educator Development, Accountability and Reform Center (CEEDAR). (2016). *Preparing and retaining effective special education teachers: Short-term strategies for long-term solutions.* https://ceedar.education.ufl.edu/wp-content/uploads/2020/01/CEEDAR-GTL-Shortages-Brief.pdf

Cook-Harvey, C. M., & Stosich, E. L. (2016). *Redesigning school accountability and support: Progress in pioneering states.* Learning Policy Institute and Stanford Center for Opportunity Policy in Education. https://learningpolicyinstitute.org/sites/default/files/product-files/Redesigning_School_Accountability_and_Support.pdf

Council of Chief State School Officers. (2017). *States' continued commitment to next-generation accountability systems.* https://www.ccsso.org/sites/default/files/2017-12/CCSSO%20Accountabilty%20Principles.pdf

Council of Chief State School Officers. (2019). *State responsibilities and opportunities for school improvement under the Every Student Succeeds Act*. https://ccsso.org/sites/default/files/2019-03/SEA%20School%20Improvement%20Under%20ESSA%20Mar%202019%20PSA%20CCSSO%20Final%203.22.19.pdf

Dee, T., & Jacob, B. A. (2010). The impact of No Child Left Behind on students, teachers, and schools. *Brookings Papers on Economic Activity,* 149–207. https://cepa.stanford.edu/content/impact-no-child-left-behind-students-teachers-and-schools

Doherty, K. M., Jacobs, S., & Lueken, M. F. Lifting the pension fog: What teachers and taxpayers need to know about the teacher pension crisis. National Council on Teacher Quality. (2017). https://www.nctq.org/dmsView/Lifting_the_Pension_Fog

Doherty, K. M., Jacobs, S., & Madden, T. M. (2012). *No one benefits: How teacher pension systems are failing both teachers and taxpayers.* National Council on Teacher Quality. https://www.nctq.org/dmsView/No_One_Benefits_Teacher_Pension_Systems_NCTQ_Report

Doyle, D. (2015). *Ask the team: Leadership and lattices: New pathways across the teaching profession*. Center on Great Teachers and Leaders. https://gtlcenter.org/sites/default/files/1580%20GTL%20Ask%20the%20Team_Leadership%20Lattices%20d2%20lvr.pdf

Education Commission of the States. (2019a). *50-state comparison: K–12 funding.* https://www.ecs.org/50-state-comparison-k-12-funding/

Education Commission of the States. (2019b). *50-state comparison: K–12 funding: Small size or isolated funding adjustment.* https://c0arw235.caspio.com/dp/b7f93000ea1a61b8c7fd496d8603

Education Commission of the States. (2019c). *50-state comparison: K–12 special education funding.* https://c0arw235.caspio.com/dp/b7f930000f26bd86ea194864a088

Education Week. (2019a). Data: Breaking down the where and why of K–12 spending. *Education Week, 39*(6), 12–17. https://www.edweek.org/ew/section/multimedia/the-where-and-why-of-k-12-spending.html

Education Week. (2019b). In national ranking of school systems, a new state is on top. *Education Week, 39*(3), 8–9. https://www.edweek.org/ew/articles/2019/09/04/new-jersey-tops-national-ranking-of-schools.html

Espinoza, D., Saunders, R., Kini, T., & Darling-Hammond, L. (2018). *Taking the long view: State efforts to solve teacher shortages by strengthening the profession.* Learning Policy Institute. https://learningpolicyinstitute.org/sites/default/files/product-files/Long_View_REPORT.pdf

Fitzpatrick, M. D. (2015). How much are public school teachers willing to pay for their retirement benefits? *American Economic Journal: Economic Policy, 7*(4), 165–188.

Griffith, M. (2015). A look at funding for students with disabilities. *The Progress of Education Reform, 16*(1).

Harr, J. J., Parrish, T., Chambers, J., Levin, J., & Segarra, M. (2006). *Considering special education adequacy in California.* American Institutes for Research.

Hinojosa, D. (2018). *School finance series: Essential building blocks for state school finance systems and promising state practices.* Learning Policy Institute. https://learningpolicyinstitute.org/sites/default/files/product-files/Essential_Building_Blocks_State_School_Finance_Systems_REPORT.pdf

Hunt, T. (2005). Education reforms: Lessons from history. *The Phi Delta Kappan, 87*(1), 84–89. www.jstor.org/stable/20441930

Hyman, S. L. (2013). New DSM-5 includes changes to autism criteria. *AAP News.* https://www.aappublications.org/content/aapnews/early/2013/06/04/aapnews.20130604-1.full.pdf

Johnes, J., Portela, M., & Thanassoulis, E. (2017). Efficiency in education. *Journal of the Operational Research Society, 68*(4), 331–338.

Katz, N., Wright Apfelbaum, K., Frank, S., & Hawley Miles, K. (2018). *Low teacher salaries 101: How we got here, why it matters, and how school systems and states can compensate teachers fairly and strategically.* Education Resource Strategies. https://www.erstrategies.org/tap/low_teacher_salaries_101

Koedel, C. (2018). *Pensions and California public schools.* Getting Down to Facts Project. Stanford University. https://gettingdowntofacts.com/sites/default/files/2018-09/GDTFII_Brief_Pensions.pdf

Krausen, K., Caparas, R., & Willis, J. (2018). *Education budget strategies for challenging times: How California school districts are addressing the silent recession.* WestEd. https://www.wested.org/resources/education-budget-strategies-for-challenging-times-how-california-school-districts-are-addressing-the-silent-recession/

Krausen, K., & Willis, J. (2018). *Silent recession: Why California school districts are underwater despite increases in funding.* WestEd. https://www.wested.org/resources/silent-recession/

Labaree, D. (2019). *From citizens to consumers: Evolution of reform rhetoric and consumer practice in the U.S. Lecture delivered at Kyoto University and Keio University.* https://drive.google.com/file/d/1CLQ3hKQh1MDo8gdHPFyLYvYi37vsOcGV/view

Lavelle, T. A., Weinstein, M. C, Newhouse, J. P, Munir, K., Kuhlthau, K. A., & Prosser, L. A. (2014). *Economic burden of childhood autism spectrum disorders.* Pediatrics. https://pdfs.semanticscholar.org/ea74/1819b8302ad0722c5e013ae5e4989aa06eb5.pdf

Leachman, M. (2019). *K–12 funding still lagging in many states.* Center on Budget and Policy Priorities. https://www.cbpp.org/blog/k-12-funding-still-lagging-in-many-states

Leachman, M., Masterson, K., & Figueroa, E. (2017). *A punishing decade for school funding.* Center on Budget and Policy Priorities. https://www.cbpp.org/research/state-budget-and-tax/a-punishing-decade-for-school-funding

Liljenquist, D. (2015). *Keeping the promise: State solutions for government pension reform.* American Legislative Exchange Council. https://www.alec.org/app/uploads/2015/12/Keeping-the-Promise_-State-Solutions-for-Government-Pension-Reform.pdf

Marchitello, M. (2017). *Illinois' teacher pension plans deepen school funding inequities.* Bellwether Education Partners. https://bellwethereducation.org/publication/illinois%E2%80%99-teacher-pension-plans-deepen-school-funding-inequities

Martin, J. A., Kirmeyer, S., Osterman, M., & Shepherd, R. A. (2009). *Born a bit too early: Recent trends in late preterm births. NCHS data brief, no 24.* National Center for Health Statistics.

McFeely, S. (2018). *Why your best teachers are leaving and 4 ways to keep them.* Gallup. https://www.gallup.com/education/237275/why-best-teachers-leaving-ways-keep.aspx

Mennis, G., Banta, S., & Draine, D. (2018). *Assessing the risk of fiscal distress for public pensions: State stress test analysis.* Harvard University, John F. Kennedy School of Government, Mossavar-Rahmani Center for Business and Government. https://www.hks.harvard.edu/sites/default/files/centers/mrcbg/files/AWP_92_final.pdf

Mennis, G., & Fehr, S. (2018). *States turn to new tool to sustain pension system funding: Stress tests help policymakers plan for the next recession.* Pew Charitable Trusts. https://www.pewtrusts.org/en/research-and-analysis/articles/2018/05/16/states-turn-to-new-tool-to-sustain-pension-system-funding

Natale, C., Gaddis, L., Bassett, K., & McKnight, K. (2013). *Creating sustainable teacher career pathways: A 21st century imperative.* National Network of State Teachers of the Year. https://www.pearsoned.com/wp-content/uploads/CSTCP-21CI-pk-final-WEB.pdf

National Center for Education Statistics. (2018). *Public school expenditures.* U.S. Department of Education. https://nces.ed.gov/programs/coe/indicator_cmb.asp

National Center for Education Statistics. (2019a). *English language learners in public schools.* U.S. Department of Education. https://nces.ed.gov/programs/coe/indicator_cgf.asp

National Center for Education Statistics. (2019b). *Children and youth with disabilities.* U.S. Department of Education. https://nces.ed.gov/programs/coe/indicator_cgg.asp

National Center for Homeless Education. (2009). *Education for homeless children and youths program: Analysis of data from the 2007–08 federally required state data collection for the McKinney-Vento Education Assistance Improvements Act of 2001 and comparison of the 2005–06, 2006–07, and 2007–08 data collections.* https://www2.ed.gov/programs/homeless/data-comp-04-07.pdf

National Center for Homeless Education. (2019). *Federal data summary school years 2014–15 to 2016–17: Education for homeless children and youth.* https://nche.ed.gov/wp-content/uploads/2019/02/Federal-Data-Summary-SY-14.15-to-16.17-Final-Published-2.12.19.pdf

National Council on Teacher Quality. (2018). *Databurst: Strategic teacher compensation.* https://www.nctq.org/dmsView/Strategic_Compensation_Databurst

New York State Association of School Business Officials. (2015). *The education dollar: A look at spending and funding trends.* www.asbonewyork.org/resource/resmgr/reports/1442244064_Spending_2015.pdf

Partelow, L., & Quirk, A. (2019). *Strikes driving change in states with lowest-paid teachers.* Center for American Progress. https://www.americanprogress.org/issues/education-k-12/news/2019/04/16/468000/strikes-driving-change-states-lowest-paid-teachers/

Pew Charitable Trusts. (2018). *The state pension funding gap: 2016.* https://www.pewtrusts.org/-/media/assets/2018/04/state_pensions_funding_gap_2016_final.pdf

Picus, L., Goertz, M., & Odden, A. (2015). Intergovernmental aid formulas and case studies. In H. F. Ladd & M. E. Goertz (Eds.), *Handbook of research in education finance and policy.* Routledge.

Rebell, M. (2016). Ensuring adequate funding: The role of the courts. In W. Mathis and T. Trujillo (Eds.), *Learning from the federal market-based reforms: lessons for the every student succeeds act* (pp. 507–24). Information Age Publishing.

Scafidi, B. (2017). *Back to the staffing surge: The great teacher salary stagnation and the decades-long employment growth in American public schools.* EdChoice. https://www.edchoice.org/wp-content/uploads/2017/06/Back-to-the-Staffing-Surge-by-Ben-Scafidi.pdf

Schwartz, A. E., Hopkins, B. G., Stiefel, L. (2019). *The effects of special education on the academic performance of students with learning disabilities* (EdWorkingPaper No. 19–86). Annenberg, Brown University.

Shuls, J. V., Hitt, C., & Costrell, R. M. (2019). How state pension subsidies undermine equity. *Phi Delta Kappan, 100*(8), 37–41.

Smith, J., Gasparian, H., Perry, N., & Capinpin, F. (2013). *Categorical funds: The intersection of school finance and governance.* Center for American Progress. https://www.americanprogress.org/wp-content/uploads/2013/11/CategoricalSpending1-brief-4.pdf

State of California. (2019). *California state budget 2019–20.* California State Department of Finance. http://www.ebudget.ca.gov/2019-20/pdf/Enacted/BudgetSummary/FullBudgetSummary.pdf

Taylor, L. L., Willis, J., Berg-Jacobson, A., Jaquet, K., & Caparas, R. (2018). *Estimating the costs associated with reaching student achievement expectations for Kansas public education students: A cost function approach.* WestEd.

Taylor, M. (2013). *Overview of special education in California.* Legislative Analyst's Office. https://lao.ca.gov/reports/2013/edu/special-ed-primer/special-ed-primer-010313.pdf

Tuchman, S. (2017). *Education policy factors contributing to special education identification* (Doctoral dissertation, University of Arkansas).

U.S. Bureau of Labor Statistics. (2018). *The economics daily: 51 percent of private industry workers had access to only defined contribution retirement plans.* U.S. Department of Labor, U.S. Bureau of Labor Statistics. https://www.bls.gov/opub/ted/2018/51-percent-of-private-industry-workers-had-access-to-only-defined-contribution-retirement-plans-march-2018.htm

U.S. Department of Education. (2018a). *Fiscal Year 2018 budget summary and background information.* https://www2.ed.gov/about/overview/budget/budget18/summary/18summary.pdf

U.S. Department of Education. (2018b). *National teacher preparation data, 2018 Title II report.* https://title2.ed.gov/Public/Home.aspx

Willis, J., Doutre, S. M., & Berg-Jacobson, A. (2019). *Study of the individualized education program (IEP) process and the adequate funding level for students with disabilities in Maryland*. WestEd.

Willis, J., Krausen, K., Berg-Jacobson, A., Taylor, L., Caparas, R., Lewis, R., & Jaquet, K. (2019). *A study of cost adequacy, distribution, and alignment of funding for North Carolina's K–12 public education system.* WestEd.

Zhao, Y. (2018). *What works may hurt: Side effects in education.* Teachers College Press.

APPENDIX A: SPECIAL EDUCATION FUNDING FORMULAS

Single student weights: Additional funding allocated per student receiving special education, with the same amount provided for all students with disabilities.

Multiple student weights: Funding allocated per special education student that varies by student characteristics such as eligibility category, type of placement, or student need.

Census-based: A fixed dollar amount per total enrollment count, regardless of the number of students with disabilities.

Resource-based: Funding based on payment for a certain number of specific education resources (e.g., teachers or classroom units), usually determined by prescribed staff/student ratios that may vary by disability, type of placement, or student need.

Percentage reimbursement: Funding based on a percentage of allowable, actual expenditures. In most states using this approach, a portion of costs are reimbursed for all students with disabilities; in a few states, reimbursements are only provided for exceptionally high-cost students (Education Commission of the States, 2019c).

Adjustment: Funding based on base-year or prior year allocations, revenues, and/or enrollment. The amount of funding typically increases by a set amount or percentage and is not necessarily related to resource costs or actual spending.

Combination: Funding based on a combination of formula types.